

REMARKS

Claims 1-9 are pending in the application. As will be discussed below, Claim 1 has been amended and Claim 9 has been added. No new matter has been added. Accordingly, entry of the present amendment is requested.

Support for the present amendments to Claim 1 is provided by, for example, page 8, lines 1 and 2 and page 5, lines 1 and 2 from the bottom.

Claims 13 and 5-8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 63-136,527. Additionally, Claims 2 and 4 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '527 as applied to Claims 1-3 and 5-8 and further in view of JP 09-272,850.

First, Applicants attach hereto English translations of JP '527 and JP '850.

Applicants respectfully traverse these rejections for the following reasons.

JP '527 is directed to a pressure-sensitive adhesive sheet for treating a semiconductor substrate, the adhesive sheet having a large number of fine holes. The size of the fine holes is e.g., 0.5 mm to 2.0 mm in diameter. JP '527 teaches that the bonding tape, contains perforations or ventilation parts. Therefore, Applicants respectfully submit that the present claimed subject matter is not anticipated by JP '527.

JP '850 is directed to an adhesive tape which is intended to be adhered to plastics or metals. The tape should have excellent peeling properties without the formation of any residue of the adhesive left after peeling off the adhesive tape from various adherents such as plastics or metals. The adhesive tape is a double-faced adhesive tape, having, thus, a pressure-sensitive

adhesive on both sides of the base material. The former is an acrylic pressure-sensitive adhesive and the latter comprises a non-woven fabric consisting of Manila hemp. Since the adhesive according to new Claim 1 is applied to only one surface of the base film, the claimed subject matter is not anticipated by JP '850.

Furthermore, the claimed subject matter is also not obvious from the cited prior art. In view of JP '527, it is the object of the present application to provide a water-permeable adhesive tape having improved processing properties in that problems typically associated with the processing of very thin semiconductor wafers or materials, namely chipping problems or other defects of the chips of IC parts, can be prevented. This object has been achieved by the wafer-permeable adhesive tape in accordance with the present claimed invention.

It was found by the present inventors that a tape in accordance with the present claimed invention has certain, unexpected advantages over tapes such as those described in JP '527 where the holes are drilled through both the adhesive and the base film. If the tape has perforations in the adhesive layer as in JP '527, the contact area with the substrate (here the wafer) decreases. As a consequence, the force holding the wafer decreases as well and chipping, *i.e.*, the damage of the chip, can occur by shear forces during dicing. Additionally, so called "chip fly" during dicing is more likely to occur due to the decreased adhesion force. Furthermore, when the holes are formed physically in the adhesive, *e.g.*, by drilling, the neighboring area of the hole in the adhesive rises or sinks. This results again in an increase of chipping of the wafer since the adhesive cannot support the wafer at that area.

Therefore, for the first time in the present invention, excellent processing properties of a wafer-permeable adhesive tape can be achieved if the base film, but not the adhesive layer, possesses perforations.

This is by no means suggested by the teaching of JP '527. In fact, on page 2 of the English translation of JP '527, it is stressed that the adhesive sheet according to JP '527 should have the design as mentioned above, namely a large number of the holes present in the adhesive layer and the base of the adhesive sheet so that the semiconductor substrate is fixed not only by the adhesion of the sheet but also by direct suction of it onto the suction base through the fine holes. Furthermore, it is described that such a pressure-sensitive adhesive sheet is also easier to peel since the bonding area is smaller, thereby avoiding cracking at the time of peeling the pressure-sensitive adhesive sheet.

Therefore, one of ordinary skill in the art when considering the teaching of JP 527, had no motivation to make the respective modifications in order to arrive at the present claimed subject matter.

As regards the relevance of JP 850, Applicants respectfully submit that the adhesive tapes disclosed in JP '850 are intended for an entirely different purpose. In particular, there is no disclosure that the tape should be adapted in order to deal with problems encountered when processing semiconductors wafers and/or semiconductor related materials. Furthermore, no advantage of using an adhesive without perforations in contrast to an adhesive having perforations is mentioned. However, as shown above, especially in the field of processing

APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A water-permeable adhesive tape for processing semiconductor wafers and/or semiconductor related materials, comprising at least one base film which possesses perforations and has a cavity ratio of 3.0 to 90%; and an [adhesive, wherein said at least one base film possesses perforations and has a cavity ratio of 3.0 to 90%] adhesive not having perforations applied on one surface of the base film.

Claim 9 is added as a new claim.

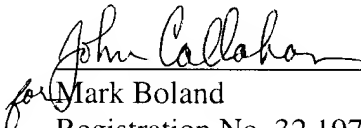
AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/818,936

semiconductor wafers and/or semiconductor related materials, the present claimed adhesive tape is superior over conventional tapes.

In view of the foregoing, Applicants respectfully submit that the present claimed invention is not rendered *prima facie* obvious by JP '527 and/or JP '850. Accordingly, withdrawal of the rejections is requested.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: January 3, 2003